



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,752	12/29/2003	Jung-Fu Cheng	4015-5165	6122
24112 7590 06/27/2007 COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			EXAMINER CAI, WAYNE HUU	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 06/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/747,752	Applicant(s) CHENG ET AL.	
	Examiner Wayne Cai	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-28, 30-34 and 52-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16-28, 30-34 and 52-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see remarks, filed June 11, 2007, with respect to the rejection(s) of claim(s) 1-14, 16-28, 30-34, 52-63 under Muller (WO 00/70897) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chen (US 6,748,224).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14, 18-28, 32-34, and 52-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (WO 00/70897) in view of Chen et al. (hereinafter "Chen", US 6,748,224).

**Regarding claims 1, 21, 52, and 58**, Muller discloses a method of reporting channel information in a wireless communication system, comprising:

a mobile terminal receiving at least one common feedback criterion broadcast to a plurality of mobile terminals (fig. 5, block 76; page 9, lines 6-14);

said mobile terminal determining if said mobile terminal satisfies a condition based on said at least one common feedback criterion (fig. 5, block 78; page 10, lines 22-25); and

said mobile terminal selectively providing an enhanced channel report regarding said downlink channel based on said determining (fig. 5, block 78; page 10, lines 3-29); and

wherein said enhanced channel report provides a more detailed view of said downlink channel than said basic channel report (page 10, lines 25-29).

Muller, however, does not specifically teach or suggest a mobile terminal normally providing a basic channel report, said basic channel report at least partially characterizing a downlink channel.

In a similar endeavor, Chen discloses a local position system. Chen also discloses a mobile terminal normally providing a basic channel report, said basic channel report at least partially characterizing a downlink channel (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Muller in view of Chen.

The motivation/suggestion for doing so would have been to accurately monitor and control the communication between the mobile station and network infrastructure.

**Regarding claims 2, and 22,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein providing an enhanced channel report comprises providing an enhanced channel report that is a superset of

Art Unit: 2617

said basic channel report (page 10, lines 24 to 26 and/or page 12, line 17 to page 13, line 10).

**Regarding claim 3,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises at least one threshold (page 5, lines 11 to 21 and page 12, lines 12 to 16).

**Regarding claim 4,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises a channel quality indicator threshold. Id.

**Regarding claim 5,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises a throughput level threshold. See WO page 12, lines 12 to 16, traffic volume.

**Regarding claim 6,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said at least one common feedback criterion comprises at least one range (page 14, lines 12 to 26).

**Regarding claims 7, and 23,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said basic channel report comprises a channel quality indicator (page 5, lines 11 to 21 and page 12, lines 12 to 16).

**Regarding claims 8, and 24,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein normally providing a

basic channel report comprises normally providing a basic channel report on a periodic basis (page 11, lines 5 to 16).

**Regarding claim 9**, Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said mobile terminal selectively providing an enhanced channel report based on said determining comprises said mobile terminal selectively providing, on a periodic basis, either said basic channel report or said enhanced channel report based on said determining (Figure 4 and corresponding description, in view of the measurement control message, the mobile station would send whichever report was required).

**Regarding claims 10, and 25**, Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said basic channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises further information on said first set of channel parameters (Figures 3-5 and their corresponding descriptions, the mobile station will report on the parameters that are requested by the base station in the measurement control message in the time frame determined in said message. The base station will include the parameters and time frame desired in the measurement control message in order to increase the flexibility and optimize the operations of the system as a whole and to promptly and effectively respond to changing conditions within the system. Also see page 4, lines 20 to 27).

**Regarding claims 11, 12, 26, and 27**, Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said basic

channel report comprises information related to a first set of one or more channel parameters of said downlink channel, and wherein said enhanced channel report comprises information related to a second set (or a first set of channel parameters and information related to a second set) of one or more channel parameters of said downlink channel different from said first set of channel parameters. See *Id.*

**Regarding claim 13**, Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein said basic channel report comprises a channel quality indicator; and wherein said mobile terminal selectively providing an enhanced channel report based on said determining comprises said mobile terminal selectively providing either said basic channel report or said enhanced channel report based on said determining. See *Id.*

**Regarding claims 14, and 28**, Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses providing an explicit indication of the presence of said enhanced channel report when said enhanced channel report is provided. This is inherent in view of, for example, Figure 4, step 58.

**Regarding claims 18-20, and 32-34**, Muller and Chen teach all the limitations recited within claims as described above, but does not specifically disclose the various combinations of providing a basic channel report over a first logical channel and an enhanced channel report over said first logical channel, at least a second logical channel or where providing over the second logical channel includes selectively providing over said first logical channel and said second logical channel. However, one of ordinary skill in the art at the time the invention was made would have understood

that the choice of logical channel for sending either of the basic channel report or the enhanced channel report would be based on resource allocations and volume traffic within the system at the time the given report was to be sent as well as the required bandwidth and necessary channel characteristics required for the reporting channel in view of the reports contents. Therefore, one of ordinary skill in the art at the time the invention was made would have known that various report schemes including various logical channel combinations would be used to provide the basic channel report and the enhanced channel report as claimed, depending on the system requirements at a given time and system loading.

**Regarding claims 53, and 59,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion comprises determining at least one common feedback criterion based on at least a desired amount of enhanced channel reports (see pages 4 to 6, it is inherent that all of these conditions are predicated on the idea of limiting or having an ideal number of reports so that unnecessary signaling can be reduced and network optimization can be obtained).

**Regarding claims 54, and 60,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a data throughput rate (see Id. and see examples above and Figures 6 to 15).



**Regarding claims 55, and 61,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion based on a desired amount of enhanced channel reports comprises determining at least one common feed back criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator (see Id. and see examples above and Figures 6 to 15).

**Regarding claims 56, and 62,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses wherein determining at least one common feedback criterion based on said desired amount of enhanced channel reports and at least one reported channel quality indicator comprises determining at least one common feedback criterion based on said desired amount of enhanced channel reports and a plurality of reported channel quality indicators (see Id. and see examples above and Figures 6 to 15).

**Regarding claim 57, and 63,** Muller and Chen disclose all limitations recited within claims as described above. Muller also discloses an amount of data queued at said base station for transmission to a plurality of said plurality of mobile terminals (see page 5, line 15, traffic volume, which inherently would include a consideration of data queued at the base station).

Claims 16-17, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller (WO 00/70897) in view of Chen et al. (hereinafter "Chen", US 6,748,224), and further in view of Seo et al. (hereinafter "Seo", US 2003/10123396).

**Regarding claims 16, 17, 30, and 31**, the combination of Muller and Chen teaches all the limitations recited within claims as described above, but does not specifically disclose employing a first spreading factor when transmitting said basic channel report and indicating the presence of said enhanced channel report by employing a different second spreading factor or pilot pattern when said enhanced channel report is transmitted (than when said basic channel report is transmitted).

However, Seo teaches in, for example, Figures 4 a way of off-setting via a different period the CQI information on the uplink HS-DPCCH channel and in Figure 9 the method of actually achieving this by using a mobile terminal to indicate the presence of specific CQI information--refreshment or refinement. See Figures 4 and 9 and the corresponding descriptions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Muller and Chen by using the method of Seo to indicate the presence of the enhanced channel report by using two different spreading factors because the method of Seo indicates to the base station the type of CQI information being transmitted (in Seo, refinement or refreshment). See Figure 4.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (571) 272-7798. The examiner can normally be reached on Monday - Thursday from 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Wayne Cai  
Art Unit 2617



DUC M. NGUYEN  
SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2600